Raj S.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

M E M O R A N D U M

DATE: August 29, 2012

TO: Brian Yeh

FROM: Rudy Eden

SUBJECT: Evaluation of Source Test Report:
(Requested by Raj Singh, August 3, 2012)

AQMD ID: *FACILITY ID NO.* **152952** *APPLICATION NO.:* **530180, 495681**
COMPANY: **SA Recycling LLC DBA SA Recycling of LA, Terminal Island**
EQUIPMENT: **Regenerative Thermal Oxidizer (RTO)**
Scrap Metal Shredder
TEST LOCATION: **901 New Dock St., Terminal Island, CA 90731**

TEST DATE: **June 18-20, 2012**

REFERENCE: **PR 12144** (STE Source Test File)

Source Test Engineering has completed the evaluation of the subject source test report and has concluded that it is:

CONDITIONALLY ACCEPTABLE

Compliance with all applicable Rules and/or Permit Conditions, as well as compliance limits, may not have been acceptably demonstrated, and/or the accuracy of some of the reported gaseous emissions and/or flows may not have been confidently confirmed, and their use regarding emission calculations may be subject to certain restrictions. Refer to the following sections for a complete discussion concerning these restrictions and compliance determination.

The attached evaluation has not been forwarded to the facility or the source testing firm. It is the responsibility of the requestor to review the attached evaluation and forward it to the parties involved, if you concur with our findings. If there are any questions, please contact Michael Cecconi at Ext. 2244.

MG:MAC
Attachment
cc: Mike Garibay
Raj Singh

12144rep SA Recycling RTO : REV 8/8/12

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

MONITORING & ANALYSIS DIVISION * SOURCE TEST ENGINEERING BRANCH

SOURCE TEST REPORT EVALUATION

S/T ID: **PR 12144**

AQMD ID: *FACILITY ID NO.* **152952** *A/N:* **530180, 495681**

COMPANY: **SA Recycling LLC DBA SA Recycling of LA, Terminal Island**

EQUIPMENT: **Regenerative Thermal Oxidizer (RTO)**
Scrap Metal Shredder

LOCATION: **901 New Dock St., Terminal Island, CA 90731**

REQUESTED BY: **Raj Singh (Memo Dated August 3, 2012)**

TYPE OF TEST: **PERFORMANCE/COMPLIANCE REPORT** *DOCUMENT DATE:* **July 25, 2012**

REASON FOR TEST: *(TESTING SUBJECT TO THE FOLLOWING RULE, PERMIT, OR SPECIFIED CONDITIONS)*:
- NOx - 60 ppm @3% O_2 or 0.073 lb/MM BTU during startup
- VOC - 95% Destruction Efficiency

REQUESTED EVAL: **CO, NOx, VOC, Speciated Organics, Multiple Metals, Acid Gases, PM_{10}**

TEST DATE: **June 18-20, 2012**

TEST FIRM: **Professional Environmental Services**

STE EVALUATOR: **Michael Cecconi** *EXT:* **2244** *REVIEW DATE:* **August 29, 2012**

OVERVIEW OF EVALUATION:

OVERALL CONFIDENCE IN REPORTED TEST RESULTS:

☐ **ACCEPTABLE** ☒ **CONDITIONALLY ACCEPTABLE** ☐ **UNACCEPTABLE**

RESTRICTIONS FOR USE OF REPORTED RESULTS:

- **NOx** adjusted emissions should only be used for compliance determination and must not be used for emission calculations such as emission rates (lb/hr) or emission credits (lb/day) or for determination of emission factors (such as lb/MM SCF of natural gas, g/bhp-hr, or ppm @0% O_2).
- **CO, VOC, Speciated Organics, Multiple Metals, Acid Gases, PM10** reported emissions may be used for compliance determination and emission calculations.

COMPLIANCE DETERMINATION:

- **CO, VOC, Speciated Organics, Multiple Metals, Acid Gases, PM10** emissions, as reported, are in compliance by an acceptable margin[1] with the Rules/Permit Compliance Limits specified above.
- **NOx** emissions, as adjusted (see next section of this evaluation), are in compliance by an acceptable margin[2] with the Rules/Permit Compliance Limits specified above.

(REFER TO NEXT SECTION FOR COMPLETE DISCUSSION OF TEST RESULTS AND CORRECTED EMISSION INFORMATION, IF APPLICABLE)

[1] NOTE: STE assigns a 10% "margin of error" to most emission rates when evaluating emissions for compliance determination. This is due to uncertainties assigned to source testing, in general, and errors associated with individual analytical procedures. As a result, some reported emissions may be judged as being in compliance although they appear to be non-compliant or marginally non-compliant. Similarly, non-compliance is judged using the same margin-of-error.

[2] NOTE: STE assigns a 10% "margin of error" to most emission rates when evaluating emissions for compliance determination. This is due to uncertainties assigned to source testing, in general, and errors associated with individual analytical procedures. As a result, some reported emissions may be judged as being in compliance although they appear to be non-compliant or marginally non-compliant. Similarly, non-compliance is judged using the same margin-of-error.

SOURCE TEST REPORT EVALUATION

DETAILED REVIEW

This source test report has been reviewed by the Evaluations Unit staff. The following specifically explains the restrictions concerning the treatment of the reported source test information:

- ☐ Completeness of Application/Protocol/Report
- ☒ Representativeness of Data & Process
- ☐ Rule/Permit Fulfillment
- ☐ Sampling & Analytical Methods
- ☐ Quality Assurance
- ☒ Calculations

REPRESENTATIVENESS OF DATA & PROCESS

- Some of the reported gaseous emissions fell short of established analytical standards, and they have been recalculated upward to default levels for qualitative compliance determination only. This applies to reported **NOx** concentrations and mass emissions. AQMD regards the valid reporting range of measurement of a Method 100.1 gas analyzer as being 20-95% of the instrument full-scale-range (FSR). Since the tester used a very low concentration calibration gas (0.4 ppm), gas measurements (as measured at the stack) falling below this lower limit were adjusted upward to the 10% FSR value for gas concentration Rule/Permit Compliance limit determination only. Adjusted **NOx** values cannot be used quantitatively for mass emission or emission factor calculations because they are probably overstated. See the "Calculations" section for the **NOx** emissions.

CALCULATIONS

- The tester made a small error in calculating the **PM** emission rate for the RTO scrubber exhaust. The tester corrected the emission rate to 1.00 lb/hr as shown on the revised calculation sheet dated August 23, 2012.
- The tester calculated the **VOC** emission rate (lb/hr) for the RTO scrubber exhaust as carbon. The tester corrected the emission rate to 0.89 lb/hr as methane as shown on the revised calculation sheet dated August 23, 2012.
- The adjusted **NOx** emission rates are as follows:

RTO Startup	RTO Scrubber Exhaust
2.5 ppm	2.5 ppm
0.478 lb/hr	0.78 lb/hr
0.052 lb/MMBTU	

PR12144

SOURCE TEST REPORT:

COMPLIANCE TESTING
OF AN AIR POLLUTION CONTROL SYSTEM
SA RECYCLING
TERMINAL ISLAND FACILITY

Conducted At:

SA RECYCLING
901 New Dock Street
Terminal Island, CA 90731

Prepared For:

YORKE ENGINEERING, LLC
31726 Rancho Viejo Road, Suite 218.
San Juan Capistrano, California 92675

Conducted On:

June 18, 19 and 20, 2012

Submitted On:
July 25, 2012

Project No: 1234.010

Prepared By:

PROFESSIONAL ENVIRONMENTAL SERVICES, INC.
5027 Irwindale Avenue, Suite 100
Irwindale, California 91706

TABLE 1

SUMMARY OF NOX, CO AND TGNMNEO DATA
AIR POLLUTION CONTROL SYSTEM
SA RECYCLING TERMINAL ISLAND FACILITY

Conducted On: June 18, 2012

Parameter:	RTO Start-up	RTO Inlet	RTO [1] Scrubber Exhaust	Compliance Limit
NOx: 25 ppm				
ppm (v/v)	1.16 2.5		0.64 2.5	
lbs/hr [2]	0.222 0.478		0.20 0.78	
lbs/MMBtu	0.024 0.052		NA	0.073
CO:				
ppm (v/v)	202	50 ppm	25.1	
lbs/hr	23.46		4.84	
TGNMNEO:				
ppm (v/v) [3]		391	8.1	9.95 ppm
lbs/hr		28.5 as C	0.68 as C	
Efficiency (%)			0.89 as CH_4	97.6
Fuel Data:			1.11	96 %
Natural gas rate (scfh)	8,841	NA	NA	
Heat inputMMBtu/hr) [4]	9.28	NA	NA	
Flow (dscfm)	26,470	38,707	43,405	
O_2 (%)	19.04	20.8	20.4	
CO2 (%)	0.90	0.47	0.38	

[1] RTO Scrubber data for NOx and CO are based on the average of three test runs each one hour in duration.

[2] Mass emissions are based on velocity traverses conducted at the scrubber exhaust.

[3] TGNMNEO data based on the average of duplicate samples at the inlet location and the highest value of duplicate samples at the scrubber exhaust since the variation between samples was greater than 20% per SCAQMD Method 25.3.

[4] Heat input based on RTO natural gas meter readings during testing and a fuel heating value of 1,050 Btu/cf.

$9.16 \times 1.0E^{x} =$

$(8710 \frac{dscf}{MMBtu})(9.28 \frac{MMBtu}{hr})(\frac{20.9}{20.9-19.04})(\frac{1}{60})$

$= 15,137$ dscfm

TABLE 2

SUMMARY OF PARTICULATE MATTER DATA
AIR POLLUTION CONTROL SYSTEM
SA RECYCLING TERMINAL ISLAND FACILITY

Conducted On: June 19, 2012

Parameter:	RTO Inlet	RTO Scrubber Exhaust
Total Particulate Matter		
grains/dscf	0.0056	0.0027
lbs/hr	1.782	~~1.016~~ 1.002
Exhaust Flow		
Flow (dscfm)	37,235	43,625

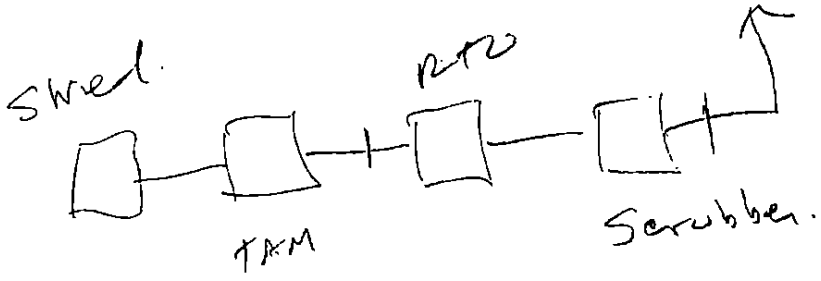

TABLE 3
SUMMARY OF TRACE ELEMENT DATA
AIR POLLUTION CONTROL SYSTEM SCRUBBER EXHAUST
SA RECYCLING TERMINAL ISLAND FACILITY
Conducted On: June 18-19, 2012

Parameter:	Run No. 1	Run No. 2	Run No. 3	Average
Antimony				
ug/m^3	0.11	0.11	ND	<0.11
lbs/hr	0.000018	0.000018	ND	<0.000018
Arsenic				
ug/m^3	0.29	0.08	0.42	0.26
lbs/hr	0.000047	0.000012	0.000069	0.000043
Barium				
ug/m^3	1.23	1.43	135.79	46.15
lbs/hr	0.000199	0.000233	0.022056	0.007496
Beryllium				
ug/m^3	ND	ND	ND	ND
lbs/hr	ND	ND	ND	ND
Cadmium				
ug/m^3	0.11	0.11	0.07	0.10
lbs/hr	0.000018	0.000019	0.000012	0.000016
Chromium				
ug/m^3	0.58	0.56	4.40	1.85
lbs/hr	0.000094	0.000092	0.000715	0.00030
Cobalt				
ug/m^3	0.23	0.20	0.29	0.24
lbs/hr	0.000038	0.000032	0.000048	0.000039
Copper				
ug/m^3	1.99	5.07	0.53	2.53
lbs/hr	0.000322	0.000827	0.000086	0.000412
Lead				
ug/m^3	4.69	5.43	9.91	6.68
lbs/hr	0.000761	0.000886	0.001610	0.001086
Manganese				
ug/m^3	1.01	1.09	1.30	1.13
lbs/hr	0.000164	0.000177	0.000212	0.000184
Nickel				
ug/m^3	0.74	1.03	0.53	0.77
lbs/hr	0.000120	0.000168	0.000086	0.000125
Mercury				
ug/m^3	19.92	30.6	25.4	25.31
lbs/hr	0.00322	0.00496	0.00415	0.00411
Silver				
ug/m^3	ND	ND	0.22	<0.22
lbs/hr	ND	ND	0.000036	<0.000036
Exhaust Flow				
acfm	49,017	48,937	49,073	49,009
dscfm	43,297	43,561	43,357	43,405

TABLE 4
SUMMARY OF SPECIATED ORGANICS
AIR POLLUTION CONTROL SYSTEM SCRUBBER EXHAUST
SA RECYCLING TERMINAL ISLAND FACILITY
Conducted On: June 18, 2012

Parameter:	Run No. 1	Run No. 2	Run No. 3	Average
Benzene				
ppb v/v	4.3	7.9	15.0	9.1
lbs/hr	0.0023	0.0042	0.0079	0.0048
Ethylbenzene				
ppb v/v	9.4	6.6	9.3	8.4
lbs/hr	0.0067	0.0047	0.0067	0.0060
1,1-Dichloroethene				
ppb v/v	15	23	42	27
lbs/hr	0.0098	0.0150	0.0275	0.0174
Chloromethane				
ppb v/v	9.7	19	31	20
lbs/hr	0.0033	0.0065	0.0106	0.0068
Trichlorofluoromethane				
ppb v/v	360	400	720	493
lbs/hr	0.3335	0.3706	0.6671	0.4571
Dichlorodifluoromethane				
ppb v/v	410	420	400	410
lbs/hr	0.3318	0.3398	0.3237	0.3317
1,2,4-Trimethylbenzene				
ppb v/v	12	11	15	13
lbs/hr	0.0097	0.0089	0.0122	0.0103
Toluene				
ppb v/v	19	26	45	30
lbs/hr	0.0118	0.0161	0.0279	0.0186
1,3,5-Trimethylbenzene				
ppb v/v	3.6	3.3	4.8	3.9
lbs/hr	0.0029	0.0027	0.0039	0.0032
***m,p*-Xylene**				
ppb v/v	37	25	37	33
lbs/hr	0.0265	0.0179	0.0265	0.0236
***o*-Xylene**				
ppb v/v	12	9.4	14	11.8
lbs/hr	0.0086	0.0067	0.0100	0.0084
4-Ethyltoluene				
ppb v/v	3.4	6.6	9.3	6.4
lbs/hr	0.0028	0.0053	0.0075	0.0052
Exhaust Flow				
acfm	49,017	49,017	49,107	49,017
dscfm	43,297	43,297	43,297	43,297

TABLE 5

SUMMARY OF HF AND HCL DATA
AIR POLLUTION CONTROL SYSTEM SCRUBBER EXHAUST
SA RECYCLING TERMINAL ISLAND FACILITY

Conducted On: June 18-19, 2012

Parameter:	Run No. 1	Run No. 2	Run No. 3	Average
HF				
grains/dscf	0.0001	<0.0001	0.0001	<0.0001
lbs/hr	0.027	0.015	0.020	<0.021
HCL				
grains/dscf	0.0003	0.0003	0.0003	0.0003
lbs/hr	0.106	0.119	0.121	0.116
Exhaust Flow				
dscfm	42,980	43,097	42,870	42,982